



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,700	02/03/2005	Takao Sawabe	8048-1076	8543

466 7590 08/25/2006

YOUNG & THOMPSON  
745 SOUTH 23RD STREET  
2ND FLOOR  
ARLINGTON, VA 22202

EXAMINER

NGUYEN, LINH THI

ART UNIT PAPER NUMBER

2627

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/523,700	<b>Applicant(s)</b> SAWABE ET AL.	
	<b>Examiner</b> Linh T. Nguyen	<b>Art Unit</b> 2627	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 February 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 28-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 28-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 51-53 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 51-53 are drawn to a "program" *per se* as recited in the preamble and as such is non-statutory subject matter. See MPEP § 2106.IV.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and

Art Unit: 2627

other claimed elements of a computer, which permit the computer program's functionality to be realized.

Claim 54 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

Both types of "descriptive material" are nonstatutory when claimed as descriptive material per se. Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory

held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 28-31, 33-40, and 42-54 are rejected under 35 U.S.C. 102(b) as being unpatentable by Kaoru et al (JP Publication number 09259539).

In regards to claims 28, 37, and 54, Kaoru et al discloses an information record medium and an apparatus on which reproduction control information (Fig. 1, element 43 and Paragraph [0060], lines 1-4) including channel assignment information in which each bit position in a bit arrangement made of a plurality of bits is assigned to each channel corresponding to each speaker position in a speaker arrangement made of a plurality of speakers (Paragraph [0061]; Fig. 4 and 5), so that each bit value indicates whether or not audio data for each channel corresponding to each bit exists (Fig. 5, shows 8 channels Ach0-Ach7 and each channel has 8 bits b0-b63 which represent the data in the channel), and a plurality of audio data (Fig. 1, element 43 are in each VOB) whose existence is indicated by the channel assignment information and recorded for each channel are recorded (Paragraph [0060]).

In regards to claims 29 and 38, Kaoru et al discloses the information record medium and apparatus, wherein the channel assignment information comprises a channel assignment table in which the speaker arrangement is associated with the bit arrangement (Fig. 6, table 303 and Paragraph [0069]).

In regards to claims 30 and 39, Kaoru et al discloses the information record medium and apparatus, wherein the plurality of audio data is packed or packetized (Fig. 1 element 43), and arranged in a sequence corresponding to an arrangement sequence of the plurality of bits (Fig. 5, chart 303) by one or more sample units in each pack or each packet (Fig. 1, element 43 in each VOB).

In regards to claims 31 and 40, Kaoru et al discloses the information record medium and apparatus, wherein a bit existing at a predetermined position in the bit arrangement (Paragraph [0064]) indicates whether or not audio data for any channel not corresponding to a speaker position in the speaker arrangement exists (Paragraph [0065], lines 5-7).

In regards to claims 33 and 42, Kaoru et al discloses the information record medium according to claim 28, wherein the bit arrangement is made of a plurality of bits (Fig. 5, 8 bits for each channel) arranged two dimensionally with a predetermined number of bits for each row (Fig. 5, 8 bits/channel and 8 channels) over a predetermined number of rows (8 channels), the speaker arrangement is made of a

plurality of speakers arranged on a plane corresponding to the two dimensional arrangement of the plurality of bits (Fig. 9).

In regards to claims 34 and 43, Kaoru et al discloses the information record medium and apparatus, wherein the speaker arrangement is made of a plurality of speakers arranged three dimensionally, the bit arrangement includes a plurality of partial bit arrangements (Paragraph [0082]), each of the plurality of partial bit arrangements is made of a plurality of bits arranged two dimensionally with a predetermined number of bits for each row over a predetermined number of rows (Fig. 5), each partial bit arrangement being associated with a plurality of channels (Fig. 5, 8 channels) corresponding to a plurality of speakers arranged on a plane of the same height for each concerned partial bit arrangement (Fig. 4 and 26), from among the plurality of speakers arranged three dimensionally, the plurality of partial bit arrangements exist as many as the number of the planes (Fig. 4, SPtfl= top speaker, SPgfl= ground speaker, SPsr= side speaker).

In regards to claims 35 and 44, Kaoru et al discloses the information record medium and apparatus, wherein the reproduction control information further includes total channel number information to indicate a total channel number (Fig. 5, element 302a-c), layer information to indicate a total number of planes having different heights from each other allowing a three dimensional arrangement of speakers (Paragraph [0124], lines 12-18), and layer constitution information to indicate whether or not at least

one speaker is disposed on each plane (Paragraph [0123], lines 7-9).

In regards to claims 36 and 45, Kaoru et al discloses the information record medium and apparatus, wherein at least one of the predetermined number of bits or the predetermined number of rows is variable (Fig. 5, b63, b55, b47, b39...).

In regards to claims 47, 48, 49, 50, 52, and 53, Kaoru discloses an information reproduction apparatus and method for reproducing a plurality of audio data (Fig. 1, element 43) from an information record medium on which reproduction control information (Fig. 5, element 300) including channel assignment information (Fig. 5, Ach0-7) in which each bit position in a bit arrangement made of a plurality of bits is assigned to each channel (Fig. 5, b0-b7 bits are assigned to channel 7 and so on) corresponding to each speaker position in a speaker arrangement made of a plurality of speakers (Paragraph [0071]), so that each bit value indicates whether or not audio data for each channel corresponding to each bit exists (Paragraph [0073]), and the plurality of audio data (Fig. 1, element 43) are in each VOB whose existence is indicated by the channel assignment information and recorded for each channel are recorded (Paragraph [0060]), said information reproduction apparatus (Fig. 13) comprising: a reading device for reading the plurality of audio data (Fig. 13, element 80) and the reproduction control information from the information record medium (Fig. 13, element 92); an identifying device for identifying channels of the plurality of audio data recorded in the information record medium, on the basis of each bit position in the bit



Art Unit: 2627

arrangement relating to the channel assignment information included in the read reproduction control information (Fig. 13, element 100; Paragraph [0120], lines 5-12); and a reproducing device for reproducing the plurality of read audio data as a plurality of audio data for the identified each channel (Fig. 13, element 93).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 32 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaoru et al in view of Hitoshi et al (US Publication number 2000011546).

In regards to claims 32 and 41, Kaoru et al discloses everything claimed as above (see claim 28) and indicates whether or not audio data for super woofer channels exists (Paragraph [0077], lines 1-8). However, Kaoru et al fails to disclose an LSB (Least Significant Bit) in the bit arrangement

In the same field of endeavor, Hitoshi et al discloses an arrangement of bit to MSB to LSB (Fig. 4). At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the recording medium of Kaoru et al to include LSB bits arrangement as taught by Hitoshi et al. The motivation for doing so would have been to simplify the software for data processing (Paragraph [0039], lines 8-9).

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh T. Nguyen whose telephone number is 571-272-5513. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A. Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LN  
August 15, 2006

  
**ANDREA WELLINGTON**  
**SUPERVISORY PATENT EXAMINER**